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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 771,673	01/29/2001	Hessel Sprey	NEDER23.001CP1	8115

20095 7590 12/10/2002

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EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

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DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,673

Examiner

Sylvia R MacArthur

Applicant(s)

SPREY ET AL.

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 29 January 2001 and 07 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 29 January 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.

- 4) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-489)
5) ☐ Information Disclosure Statement(s) (PTO-1449) Paper Note(s) 3

- 4) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-489)
5) ☐ Notice of Final Patent Application (PTO-152)
6) ☐ Other

Art Unit: 1763

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 11-14, drawn to a method for etching a substrate, classified in class 216, subclass 73.
 - II. Claims 15-20, drawn to an apparatus for etching a substrate, classified in class 156, subclass 345.33.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used to practice another method, i.e. one where both valves open simultaneously. These are statements of intended use and are not withstanding.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Martin Hellebrandt on December 6, 2002 a provisional election was made with traverse to prosecute the invention of the apparatus, claims 15-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-14 are withdrawn from further consideration by the examiner, 37 CFR 1.112(b).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 15, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Tohru et al (EPO 0335313).

Tohru teaches a method and apparatus for manufacturing a semiconductor device. Tohru discusses an etching chamber (quartz tube 10), discharging chamber 14 (auxiliary chamber). Etchant 14A and catalyst 14B are introduced into the etching chamber via the auxiliary chamber positioned within a first path (17). Etchant 10A and catalyst 10B are positioned within a second path. The etching chamber is exhausted using exhaust pump 12. A plurality of shut-off valves is shown along the pipelines in Fig.1. The lines to the etching chamber are flushed via the auxiliary chamber. The open/closed state of the shut-off valves is a matter of intended use, which does not merit patentable weight.

7. Claims 15, 16, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Izumi et al (USP 5,022,961).

Izumi teaches a method of etching a film comprising HF and an alcohol as etchants and nitrogen as the catalyst. The bubbler illustrated in Fig. 1 is the auxiliary chamber. The reaction chamber is illustrated therein as element 12. A plurality of (shut-off) valves is illustrated as well as bypass line 18. Note when the valve of line 26 is shut off the auxiliary chamber is by-passed

Art Unit: 1763

lines 8-15. Izumi further teaches that the etching chamber 12 is formed with Teflon as it has particularly excellent characteristics in resistance to HF. The open closed state of the shut-off valves is a matter of intended use, which does not merit patentable weight.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi in view of Mayer et al (USP 6,333, 275).

The teaching of Izumi were discussed above.

Izumi fails to teach that the etching chamber comprises polyvinylidene fluoride (PVDF).

Mayer teaches the advantages utilizing such plastics as PVDF as a material of construction in harsh corrosive environments. In col. 12 lines 4-13, Izumi discusses the motivation to utilize plastics such as PVDF. Therein it is discussed that PVDF is resist to chemical attack and has sufficient mechanical strength (without creep or flow) to maintain necessary stringent mechanical tolerances.

Thus, it would have been obvious for one of ordinary skill in the art at time of the claimed invention to utilize PVDF as the material of construction for the etching chamber.

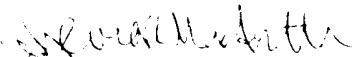
Art Unit: 1763

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 703-306-5690.

The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Sylvia R. MacArthur
December 9, 2002

